

BOGATYREV, P.M.; ZHEBROVSKIY, V.V.; LEBEVA, N.S.; Prinimali uchastiye:
REMIZOVA, K.A.; DLUGACH, E.I.; MIRASHEVA, R.A.; PASHCHENKO, M.K.;
MARTYUSHOV, B.I.; STORCHAY, Ye.I.

Lacquer and paint coatings withstandng very low temperatures. Lakokras.
mat. i ikh prim. no.2:6-9 '63. (MIRA 16:4)
(Protective coatings--Testing) (Polymers)

PASHCHENKO, V.N.; RIVNENKO, G.I. [Rivnenko, V.P.]

Phytochemical studies on the cocklebur Xanthium strumarium.
Farmatsev. zhur. 19 no.4:50-52 '64. (MIRA ITAL.)

I. Katedra tekhnologii lekarstv i galenovyki preparativ Khar'kovskogo
farmatsevticheskogo instituta.

D'YACHKOV, A.K., doktor tekhn.nauk,prof.; ZHIRONIRSKIY, V.K., doktor tekhn. nauk; KISLIK, V.A., doktor tekhn.nauk, prof.; KRASNICHENKO, L.V., doktor tekhn. nauk, prof.; KOVALEV, M.P., kand. tekhn. nauk; PARGIN, D.P., kand. tekhn. nauk; PLUTALOVA, L.A., kand.tekhn.nauk; LETKOV, N.L., inzh.; PASHCHENKO, M.P., inzh.; PETRUSEVICH, A.I., doktor tekhn. nauk, prof.; MARENNSKAYA, I.Ya., red. izd-va; UVAROV, A.F., tekhn. red.

[International conference on lubrication and wear of machinery; proceedings] Mezhdunarodnaia konferentsiia po smazke i iznosu mashin proceedings. Moscow, Mashgiz, 1962. 658 p. (MIHA 15:5)

1. Conference on Lubrication and Wear, London, 1957.
(Lubrication and lubricants--Congresses)
(Mechanical wear--Congresses)

PASHCHENKO, N.

Moscow construction workers fulfill their obligations. Na stroi. Ros.
no.8:4-6 Ag '61. (MIRA 14:9)

1. Nachal'nik Glavmosstroya.
(Moscow--Construction industry)

PASHCHENKO, N.A.

Automatic syntactical analysis of prepositional constructions, for
material in Czech and Russian. NTL no. 5: 15-38 '66. (MIRA 12;2)

PASHCHENKO, N.A.

Problems of automatic syntactical analysis of Czech scientific
and technical texts. NTI no.9:38-43 '63. (MIRA 16:12)

PASHCHENKO, N.M.; SOROKINA, Ye.D.; BARANOVA, V.G.

Quantitative determination of acetonitrile in isoprene, isoamylenes
and their mixtures from infrared absorption spectra. Zav. lab. 31 no.2:
178-179 '65. (MIRA 18:7)

1. Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo
kauchuka.

GAM, J.S., prof.; GOLIKHIN, D.K., prof.; GOLOVATY, V.A., docent; SKUDINA,
V.K., kandidat; MEDVEDEV, M.M., kandidat; SHKALIKOV,
N.P., kandidat; SOKOLOVSKII, V.V., kandidat; TROFIMOV,

Hygienic conditions and labor safety at Chernobyl hydrosystem
Exhibit No. 14-3-3...

I. L. Kurnikov, head of the Institute of Hygiene and Labor Protection
Siberian Branch, Institute of Hygiene and Labor Protection, Siberian Branch,
Institute of Hygiene and Labor Protection, Moscow, Russia.

PASHCHENKO, N.Ye.

Use of prefabrication techniques and mechanization in housing construction by the Main Administration for Housing and Public Construction in the City of Moscow. Mekh. stroi. 18 no.10: 14-16 O '61. (MIRA 14:11)

1. Nachal'nik Glavmosstroya, chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR.
(Moscow--Building)

PASHCHENKO, N.A.; SMUL'SKAYA, T.K.; MURONETS, I.I., red.; ZAPOROZNETS,
V.M., red.; ROZAEHOVA, N.A., red.; TUMARKINA, N.A., tekhn.red.

[Concise Czech-Russian geophysical dictionary] Kratkii
cheshsko-russkii geofizicheskii slovar'. Sost.N.A.Pashchenko,
T.K.Smul'skaya. Moskva, Glav.red.inostr.nauchno-tekhn.slovarei
Fizmatgiza, 1960. 248 p. (MIRA 13:11)

(Geophysics--Dictionaries)
(Czech language--Dictionaries--Russian)

PASHCHENKO, N.I.

Residual changes after curing various types of infiltrative pulmonary tuberculosis. Sov.med. 25 no.1:72-77 Ja '62. (MIia 15:4)

1. Iz kafedry tuberkuleza (zav. - prof. I.Ye.Kochnova) II Moskovskogo meditsinskogo instituta imeni N.I.Pirogova.
(TUBERCULOSIS)

GREBENNIK, L.I.; MAKEYeva, O.O.; PASHCHENKO, N.I.

Urinary excretion of products from the transformation of hydrazide of isonicotinic acid, phthiazide, and metazide in patients with pulmonary tuberculosis. Khim. i med. no.14:39-42 '60. (MI:A 14:12)

1. Otdel khimioterapii (zav. - prof. G.N.Pershin) Vsesoyuznogo nauchno-issledovatel'skogo khimio-farmatsevticheskogo instituta imeni S.Ordzhonikidze i kafedra tuberkuleza (zav. - prof. I.Ye. Kochanova) II Moskovskogo meditsinskogo instituta imeni N.I.Pirogova.
(ISONIAZID) (PHTHIAZIDE) (METAZIDE)
(TUBERCULOSIS)

GREBENNICK, L.I.; PASHCHENKO, N.I.; OBOLONINA, A.I.

Effect of tuberculostatic preparations on the vitamin C Level in pulmonary tuberculosis. Sov. med. 23 no.5:76-81 My '59. (MIRA 12:7)

1. Iz otdela khimioterapii (zav. - prof. G. N. Pershin) Vsesoyuznogo nauchno-issledovatel'skogo khimiko-farmatsevticheskogo instituta imeni S. Ordzhonikidze i knafedry tuberkuleza (zav. - prof. I.Ye. Kochnova) II Moskovskogo gosudarstvennogo meditsinskogo instituta imeni N. I. Pirogova.

(TUBERCULOSIS, PULMONARY, ther.

tuberculostatics, eff. on vitamin C metab. (Rus))

(VITAMIN C, metab.

in pulm. tuberc., eff. of tuberculostatics (Rus))

STRAKHOV, V.G., kand. tekhn. nauk; SKOBLO, S.Ya., kand. tekhn. nauk;
SAPELKIN, N.P., inzh.; CHERNYSHEV, I.S., inzh.; OLESKEVICH,
T.I., inzh.; ANTOKHIN, N.T., inzh.; PASCHENKO, N.K., inzh.

Heating the riser heads of an ingot by exothermic plates.
Stal' 24 no.1:37-39 Ja '64. (MIRA 17:2)

1. Zhdanovskiy metallurgicheskiy institut i zavod imeni
Il'icha.

LAKHNO, Ye.G.; PASHCHENKO, N.P.

Effect of various fixed establishments on sanitary conditions
in housing. Gig. i san. 25 no. 5:25-29 My '60. (MIRA 13:10)

1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta komunal'noy
gigiyeny.

(HYGIENE)

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26.5200

17.4000 2612,4512,2212 21350
2412 2607 S/040/61/025/006/018/0211
D299/D304

AUTHOR: Pashchenko, N.T. (Moscow)

TITLE: Some aero-thermodynamics problems related to a free-molecule flow model

PERIODICAL: Prikladnaya matematika i mekhanika, v. 25, no. 6,
1961, 1132 - 1138

TEXT: The expression for heat flow (obtained by the author in an earlier work) is used to determine the temperature of a slender body in motion, for both heat-exchange by convection and radiation. The temperature is determined as a function of time, local angle of attack, velocity, and of the surface characteristics and thermodynamic parameters of the medium at the height under consideration. A noticeable dependence of the settling time of the equilibrium temperature on height, is observed. It is shown that the temperature jump between the gas and the body surface depends on the adopted model of interaction gas-surface. A certain analogy is noted between the gasdynamic temperature of deceleration and the equilibrium

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Some aero-thermodynamics problems ...

temperature of a plate in free-molecule flow. This fact, in conjunction with a further analogy (noted in the earlier work) should make it possible to use the expressions for the temperature obtained below, in continuum mechanics. Let a body travel, in a highly rarefied gas, at constant velocity V (undisturbed motion); in addition, the body may execute small non-stationary oscillations with respect to the undisturbed motion. By the kinetic model of the gas, the heat flow is expressed by

$$\begin{aligned} \Delta Q = & \frac{\epsilon \rho_\infty}{2} \left\{ \frac{2 R c^0}{V \pi} \left[T_\infty - T_\infty (1-\alpha) \left(1 + \frac{2}{3} \frac{V^\alpha V^\beta g_{\alpha\beta}}{c^{02}} \right) - \alpha T_w \right] + \right. \\ & + \frac{c^0}{2 V \pi} [V^\alpha V^\beta g_{\alpha\beta} + 2 V^\alpha w_{,\beta}^\beta g_{\alpha\beta}] + \frac{1}{2} V^\alpha V^\beta g_{\alpha\beta} (w_{,\beta}^\beta - V^\gamma w_{,\gamma}^\beta) + \\ & \left. + \frac{R}{2} \left[5 T_\infty - 4 T_\infty (1-\alpha) \left(1 + \frac{2}{3} \frac{V^\alpha V^\beta g_{\alpha\beta}}{c^{02}} \right) - 4 \alpha T_w \right] (w_{,\beta}^\beta - V^\gamma w_{,\gamma}^\beta) \right\} ds dt \end{aligned} \quad (1.1)$$

where ρ and T are the density and temperature of the gas, T_w - the temperature of the surface, c^0 - the most probable velocity of random motion of molecules, $w_{,\beta}^\beta$ - covariant derivatives of the components of the displacement vector, R - the gas constant, g - the

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Some aero-thermodynamics problems ...

fundamental metric tensor, α - the accomodation coefficient, ε - the coefficient of diffuse reflection. Further, the thermomechanical model of the body is described. After transformations one obtains the sought-for equation for the temperature

$$\frac{dT}{dt} = B_1 - B_2 T + B_3 + B_4 - B_5 T^4, \quad (1.6)$$

where

$$\begin{aligned} T &= T_w / T_\infty, & V^\alpha V^\beta g_{\alpha\beta} / c^{os} &= S^*, & \frac{w_{,n} - V^\alpha w_{,\alpha}}{c^0} &= S_n, & \frac{\epsilon p_\infty R c^0}{c_p w h \sqrt{\pi}} &= a_1 \\ B_1 &= a_1 \left[1 - (1 - \alpha) \left(1 + \frac{2}{3} S^* \right) + \frac{S^*}{2} \right], & B_2 &= a_1 \alpha \left[1 + V \bar{\pi} S_n \right], & B_3 &= a_1 V^\alpha w^\beta_{,\beta} g_{\alpha\beta} / c^{os}, \\ B_4 &= a_1 V \bar{\pi} S_n \left[\frac{1}{2} S^* + 1.25 - (1 - \alpha) \left(1 + \frac{2}{3} S^* \right) \right], & B_5 &= \frac{\sigma T_\infty^4}{\rho_w c h}, \end{aligned} \quad (1.7)$$

h being the width of the surface element. In particular, for heat-exchange by convection only (without radiation), Eq. (1.6) becomes linear

$$\frac{dT}{dt} = B_1 - B_2 T + B_3 + B_4; \quad (2.1)$$

its general solution:

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$$\underline{T} = \exp\left(-\int_0^t B_2 dt\right) \left[T_{\infty} + \int_0^t (B_1 + B_3 + B_4) \exp\left(\int_0^x B_2 dx\right) dt \quad \left(T_{\infty} = \frac{T_{w_0}}{T} \right) \right] \quad (2.2)$$

where T_{∞} is the dimensionless initial temperature of the surface element. If the body executes the undisturbed motion only, then

$$\underline{T} = T_{\infty} \exp[-a_1 \alpha t (1 + \sqrt{\kappa \pi / 2M\beta})] + \frac{1}{a} \left\{ 1 + (1 - a) \left(1 + \frac{xM^2}{3} \right) + \frac{xM^2}{4} + \frac{\sqrt{\kappa \pi / 2M\beta}}{4(1 + \sqrt{\kappa \pi / 2M\beta})} \right\} (1 - \exp[-a_1 \alpha t (1 + \sqrt{\kappa \pi / 2M\beta})]) \quad (2.3)$$

whence one obtains, for $t \rightarrow \infty$, the dimensionless equilibrium temperature

$$\underline{T}_e = \frac{1}{a} \left[1 + (1 - a) \left(1 + \frac{xM^2}{3} \right) + \frac{xM^2}{4} + \frac{\sqrt{\kappa \pi / 2M\beta}}{4(1 + \sqrt{\kappa \pi / 2M\beta})} \right] \quad (2.4)$$

which settles with time. For a plate under no angle of attack, one obtains

$$T_e = 1 + \frac{xM^2}{4} \quad (2.5)$$

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Further, the difference ΔT_e is calculated for 2 surface elements which are at angles of attacks β and $-\beta$ respectively:

$$\Delta T_e = \frac{M\beta}{2\alpha} \sqrt{\frac{x\alpha}{2}} \frac{1}{1 - x\alpha/2 M^2\beta^2} \quad (2.6)$$

It is noted that, though this difference is small, yet it is important in determining the thermal stresses which arise in structures. It is further noted that at altitudes of 100 km and above, the equilibrium temperature settles very slowly. Notwithstanding the fact that the temperature does not depend on altitude (in the absence of radiation), yet the settling time of the temperature is mainly determined by it. Eq. (2.5) is similar to the Stodola-Crocco integral. The temperature at the boundary gas-surface is

$$T^\circ = \alpha e T + \left[\frac{2-\epsilon}{2} \left(1 + \frac{xM^2}{3} \right) \left(1 + \sqrt{\frac{x}{2\alpha}} M\beta \right) \right] + \frac{\epsilon}{2} \left[\left(1 + \frac{xM^2}{3} \right) (1 - \alpha) - \alpha T \right] \quad (2.8)$$

In general the temperature undergoes a jump at this boundary. Eq.

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(2.8) can be used as a boundary condition in the solution of temperature problems. Heat-exchange with radiation: In this case Eq. (1.6) can be solved in quadratures

$$\int_{T_\infty}^T \frac{dT}{B_1 - B_2 T + B_3 + B_4 - B_5 T^4} \quad (3.1)$$

At altitudes of 150 km and above, heat-exchange takes mainly place by radiation. The time-dependence of the equilibrium temperature for various heights, was obtained by numerical integration of Eq. (1.6). Strictly speaking, the above results apply only to high altitudes in the region of free-molecule flow. Following the analogy established with continuum mechanics, Eq. (1.1) was used to determine the temperature at altitudes of 20-50 km. It was found that the equilibrium temperature settles much faster with lower height. The obtained graphs can be also used for studying the influence of the angle of attack on the settling of the equilibrium temperature. There are 3 figures, 1 table and 7 references: 4 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: J.R. Stalder, D. Jukoff, Heat Transfer to

Card 6/7

PASECHENKO, N. T.

"Highly Rarefied Plasma Flow Over Charged Bodies."

Report submitted for the 6th Symposium on Advanced Problems in Fluid Mechanics,
Zakopane, Poland, 2-6 Sept 1963.

ALL PAPERS WILL BE PUBLISHED IN A 1964 ISSUE OF THE POLISH JOURNAL OF
APPLIED MECHANICS, ARCHIWUM MECHANIKI STOSOWANEJ.

L 27296-65 EWT(1)/EPA(sp)-2/T/EEC(t)/EPA(w)-2/EWA(m)-2 Pz-6/Po-4/Pab-10/

FI-4 IJP(c) AT

ACCESSION NR: AP5002858

S/0207/64/000/005/0003/0010

57
38
B

AUTHOR: Pashchenko, N. T. (Moscow)

TITLE: On the flow of a highly rarefied plasma around a solid body

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 5, 1964, 3-10

TOPIC TAGS: plasma, flow around cylinder, rarefied gas motion, distribution function, electron, electric field, Laplace equation

ABSTRACT: The author considers the high velocity flow of a highly rarefied plasma around a stationary charged body. Assuming that the perturbations produced by the body are small and that the Debye sphere is small in comparison to the dimensions of the body, the field potential and the parameters of flow are calculated. In a system of coordinates rigidly attached to the body, the system of equations for the self-consistent field is given by

$$\epsilon^a \frac{\partial f_a}{\partial x^a} + \frac{e}{m_e} \frac{\partial \phi}{\partial x^a} \frac{\partial f_e}{\partial x^a} g^{ab} = 0, \quad \epsilon^a \frac{\partial f_i}{\partial x^a} - \frac{e}{m_i} \frac{\partial \phi}{\partial x^a} \frac{\partial f_i}{\partial x^a} g^{ab} = 0$$

$$\epsilon^a \frac{\partial f}{\partial x^a} = 0, \quad \psi_{iab} g^{ab} = 4\pi e \left\{ \int_0^\infty f_i d\epsilon - \int_0^\infty f_e d\epsilon \right\}$$

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Here f_e , f_i , and f are the distribution functions of the electrons, ions, and the neutral particles respectively. Also, c is the velocity of random motion, e is the electronic charge, ϕ is the potential of the electric field, $g^{\alpha\beta}$ is the basic metric tensor for the considered coordinate system and $\nabla/\alpha g^{\alpha\beta}$ is the Laplacian operator on the function ϕ . The boundary conditions are given by

$$f_i^+(c, x_s) = \int_{(c'n) < 0} K(c, c', x_s) f_i^-(c', x_s) dc' \\ f_i^-(c, x_s) = f_i(c, x_s) \quad \text{npn}(c, n) < 0, \quad f_i^+(c, x_s) = f_i(c, x_s) \quad \text{npn}(c, n) > 0$$

where x_s is the radius vector at any point on the surface, n is the normal to the surface at this point, and $K(c, c', x_s)$ is a kernel function of interaction. After nondimensionalizing all quantities in the following manner:

$$y^i = \frac{x^i}{R_0}, \quad \Phi = \frac{e\phi}{kT}, \quad F_i = \frac{f_i(c_i^s n)^{1/2}}{n_0}, \quad v f^a = \frac{c^a}{c_f^a},$$

the small parameters in the problem were found to be

$$S_e = \frac{v}{c_s^a}, \quad S_i = \frac{c_i}{v}, \quad \mu = \max \left| \frac{e\phi}{kT} \right|, \quad \mu_0 = \frac{e\phi_0}{kT}, \quad s = \frac{R_0}{r R_D},$$

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The solution for the potential was obtained in the form

$$e^4 \Phi_{app}^{(0)} = \frac{1}{(\pi)^{1/2}} (n_0 (1 + \Phi) - n_1) \quad (n_1 = \int_0^\infty F_1 dv_1, n_0 = \int_0^\infty F_0 dv_0)$$

As an illustration, a specific example was worked out for the case of flow around a cylinder. The potential at any radius r and distance x is given by

$$\Phi = \left[\mu_0 + \frac{1}{2s} \int_0^\infty n_0 \exp\left(-\frac{x-1}{s}\right) dx - \frac{1}{2s} \int_0^\infty n_0 \exp\left(\frac{x-1}{s}\right) dx \right] \exp\left(-\frac{r-1}{s}\right) -$$

$$- \frac{1}{2s} \int_0^\infty n_1 \exp\left(-\frac{x-1}{s}\right) dx \exp\left(\frac{r-1}{s}\right)$$

Orig. art. has: 5 figures and 37 formulas.

ASSOCIATION: none

SUBMITTED: 14 May 64

ENCL: 00

SUB CODE: ME

NO REF Sov: 006

OTHER: 005

Card 3/3

L 23777-65 EWT(1)/EWG(k)/EPA(sp)-2/EPA(w)-2/EEC(t)/T/SEC(b)-2/EWA(m)-2
Pz-6/Po-4/Pab-10/Pi-4 IJP(c) AT/RM

P/0033/64/016/002/0521/0528

ACCESSION NR: AP4049005

AUTHOR: Pashchenko, N. T. (Moscow)

TITLE: The flow of a highly rarefied plasma around a body

SOURCE: Archiwum mechaniki stosowanej, v. 16, no. 2, 1964, 521-528

TOPIC TAGS: aerodynamics, plasma flow, rarefied plasma, boundary layer, stationary flow

ABSTRACT: The problem of the flow of rarefied plasma has been studied by numerous authors. A.V. Gurevich et al. (ISZ, no. 7, 1961; UFN, 1, 79, 1963), for example, used the iteration method to solve the equations of the potential; this method however, does not bring into focus the characteristic appearance of the boundary layer resulting in a rapid change in potential in the neighborhood of the bodies. The present article solves the problem of stationary flow assuming a weakly charged body and a small Debye radius as compared to the characteristic dimensions of the body. The unperturbed plasma is quasi-neutral and contains electronic, ionic, and neutral components. The effects of the external and internal (due to motion of the charges) magnetic fields are neglected, the plasma is sufficiently rarefied to allow the omission of the collision integral, and the potential field and the force acting on the body are calculated starting

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ACCESSION NR: AP4049005

with the selfconsistent field equations derived by A. A. Vlasov (Teoriya mnogikh chastits, GITTL, 1950, M. L.). The velocity of the incident particle current is assumed to be much larger than the thermal velocity of ions but smaller than the respective velocity of electrons. The theory is applied to the case of an infinite cylinder. It turns out that for small values of the Debye radius the electric forces may become comparable to the aerodynamic ones. Orig. art. has: 32 formulas.

ASSOCIATION: Institut mekhaniki AN SSSR (Institute of Mechanics, AN SSSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: ME

NO REF SOV: 006

OTHER: 006

Card 2/2

PASHCHENKO, N.T. (Moscow)

"Highly rarified plasma flow past a charged body"

Report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow 29 Jan - 5 Feb '4.

L 27553-66 EWP(1)/EWP(2)/EWP(3)/EWP(4)/EWP(5)/EWP(6)-2/EWA(1)/EWP(7)/EWP(8)/T/ETC(1)-6/

ACC NR: AP6005552 EWA(1) IJP(1) SOURCE CODE: UR/0030/66/000/001/0112/0113
IG/WW/GG/EM/WH

AUTHOR: Pashchenko, N. T.

ORG: none

TITLE: Conference on mechanics of liquids and gases

SOURCE: AN SSSR. Vestnik, no: 1, 1966, 112-113

TOPIC TAGS: fluid mechanics, solid mechanical property, gas mechanics,
physics conference, flow analysis

ABSTRACT: The Seventh Conference on Fluid Mechanics was organized by the Institute of Basic Problems of Technology, Polish Academy of Sciences, in Jurata from October 1 to 7, 1965. In addition to Polish specialists, scientists from Great Britain, Canada, Rumania, USSR, USA, France, and other countries participated. The conference was opened by papers presented by Yu. Bonder (Poland) "The Cauchy problem for a certain type of nonstationary flows of compressed gas" and L. I. Sedov (USSR) "On energy-pulse tensors in the mechanics of continuous media". A number of papers dealt with the analysis of spatial problems of supersonic flow about bodies. In his report on supersonic flow about triangular wings at large angles of attack G. G. Chernyy (USSR), proposed a method of calculation and presented an extensive classification of various possible flow regimes. V. V. Sychev (USSR) reported on supersonic flow in a laminar wake behind a body. Considerable attention was paid to the problems of aero-

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ACC NR: AP6005552

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dynamics of rarefied gases, neutral as well as ionized (R. Gerchinskij, M. Lunts,
Ya. Lubonskiy—Poland). M. N. Kogan (USSR) presented an analysis of asymptotic flow
patterns about a body for small Knudsen numbers, as well as correlation of data on
flows which are nearly free-molecular. The work of L. G. Lyttsavanskij (USSR) has
established new "universal" boundary layer equations which make it possible to compute
once and for all certain functions solving practical boundary layer problems.¹⁵ The
paper of S. S. Grigoryan and Yu. L. Yakimov (USSR) reported the results of an investi-
gation of new phenomena occurring in a vibrating liquid. The authors proposed a
simple theory which agrees well with experiment and explains the motion of air bubbles
from the surface and the formation of a stable air "cushion". [JJ]

SUB CODE: 20 / SUBM DATE: none/

Card 2/2 BLG

PASHCHENKO, N.Ya., kand. tekhn. nauk

Effect of the size of the bank on the efficiency of an excavator
equipped with straight shovel. Mekh. stroi. 20 no.9:4-7 S '63.
(MIRA 16:10)
(Excavating machinery)

PASHCHENKO, N. Ya.; Master Tech Sci (diss) -- "The productivity of the straight shovel in side cutting". Khar'kov, 1953. 12 pp (Min Higher Educ Ukr SSR, Khar'kov Construction Engineering Inst), 150 copies (KL, No 1, 1953, 120)

PASECHENKO, N.Ye., podpolkovnik med. sluzhby

Protection of medical apparatus from corrosion. Voen.med.shur.
no.3:85-87 Mr '57. (MIRA 11:3)
(APPARATUS AND INSTRUMENTS,
protection from corrosion (Rus))

PASHCHENKO, N.Ye., laureat Stalinskoy premii; GRUZDEV, P.P., redaktor
~~BOVOKHOSHCHENOV~~, B.I., redaktor; KRINOCHINA, K.V., tekhnicheskiy
redaktor

[Fitter-installer for central heating, sewerage, water and gas
pipes] Slesar' po montazhu vnutrennikh sistem tsentral'nogo
otopleniya, kanalizatskii, vodoprovoda i gazoprovoda. Moskva,
Vses.uchebno-pedagog.izd-vo trudrezervisdat, 1951. 186 p.
(Plumbing) (MLRA 8:10)

1. PASHCHENKO, N. Ye., PALEVSKIY, S.A., Engs.
 2. USSR (600)
 4. Building Materials
 7. Building construction with large blocks., Gor.khoz.Mosk., 26, No.11,
1952
9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

PASHCHENKO, N. Ye., nachal'nik.

Measures for improvement and cost reduction in construction. Gor.khoz.
Mosk. 27 no.7:1-4 Jl '53. (MLRA 6:7)

1. Upravleniye zhilishchnogo stroitel'stva Mosgorispolkoma.
(Construction industry--Costs)

PASHCHENKO, N. Ye.

LIVCHAK, I.P., kandidat tekhnicheskikh nauk; PASHCHENKO, N.Ye.,
inzhener.

Heating system with radiator panels under windows. Gor.
khos.Mosk. 28 no.6:17-20 Je '54. (MLRA 7:?)
(Radiators)

PASHCHENKO, N.Ye.

Improve the organization and mechanization of construction work.
Gor.khos.Mosk. 28 no.7:11-14 Jl '54. (MLRA 7:?)
(Moscow--Building) (Building--Moscow)

SHATSKIY, M.M.; MILLER, V.H.; GRECHEN, A.A.; PASHCHENKO, N.Ye.; VETROV, P.I.

The "POR" valve for regulating heat output of one-pipe running-water radiators. Mats. i izobr. predl. v stroi. no. 73:13-15 '54. (MLRA 7:6)
(Radiators)

LIVCHAK, I.P.; PASHCHENKO, N.Ye.

Sanitation facilities for large-panel and building-block apartment
and public-building construction. Vod.i san.tekh. 1 no.1:4-8 Ap'55
(MLRA 8:11)
(Sanitation, Household) (Buildings, Prefabricated)

PENTKOVSKIY, N.I., dotsent, kandidat tekhnicheskikh nauk; RAYKHINSHTEYN, S.I., dotsent, kandidat tekhnicheskikh nauk; BOGUSLAVSKIY, L.D., dotsent, kandidat tekhnicheskikh nauk; PASHCHENKO, N.Ye., inzhener, retsenzent; POLYAKOV, D.L., inzhener, redaktor [deceased]; ZHURAVLEV, B.A., inzhener, nauchnyy redaktor; GOLUBENKOVA, L.A., redaktor izdatel'stva; PERSON, M.N., tekhnicheskiy redaktor

[Organization and planning of construction and assembly work in establishing heat and gas supply and ventilation] Organizatsiya i planirovanie strel'no-montazhnykh rabot po teplo-gazosnabzheniu i ventiliatsii. Pod red. D.L.Poliakova. Moskva, Gos. izd-vo lit-ry po stroit. i arkhitekture, 1956. 293 p. (MLRA 9:11)

1. Chlen-korrespondent Akademii arkhitektury SSSR (for Pashchenko)
(Heat engineering) (Ventilation)

PASHCHENKO, N.Ye., inzhener.

Consolidation and specialization of building organizations is the road
to improvement in the construction industry. Mekh.stroi.13 no.6:3-4
Je '56. (Moscow--Construction industry) (MIRA 9:9)

SOV/137-57-11-22083

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 11, p 202 (USSR)

AUTHOR: Pashchenko, N.Ye.

TITLE: Protection of Medical Instruments From Corrosion (Zashchita meditsinskikh izdeliy ot korrozii)

PERIODICAL: Voen.-med. zh., 1957, Nr 3, pp 85-87

ABSTRACT: Bibliographic entry

Card 1/1

PASHCO, Inc., Seattle.

"Centralized transportation system to cities of the Mainland
in infiltration of the Moscow Transportation Ministry. Gor. Inoz.
, 30 Nov. 1944; Ag '57. (MLRA 10:9)

... site 'mal'nikha Gora' destroyed.
(U.S. -Soviet Administration, Automatic Telephone-Building)

PASHCHENKO, n. Ye.

Further expansion of precast housing construction in Moscow. Gor. khoz.
Mosk. 32 no. 10:7-9 O '58. (MIRA 11:11)

1. Zamestitel' predsedatelya Ispolkomu Mossoveta.
(Moscow--Apartment houses) (Moscow--Precast concrete construction)

PASHCHENKO, N.Ye., inzh.; ZOKHIN, G.I., inzh.; DANTSIN, M.I., inzh.,
nauchnyy sotrudnik

Producing new synthetic materials at the Mytishchi Combine.
Stroi.mat. 5 no.11:24-26 N '59. (MIRA 13:3)

1. Nachal'nik Upravleniya predpriyatii gipsovykh i termoizolyatsionnykh izdeliy Glavmospromstroymaterialov (for Pashchenko).
2. Direktor Mytishchenskogo kombinata sinteticheskikh stroitel'nykh izdeliy i materialov (for Zokhin). 3. Nauchno-issledovatel'skiy institut zhelezobetona (for Dantsin).
(Mytishchi--Synthetic products)

PASHCHENKO, N.Ye.

Preparatory operations on building sites are the most important task of
building organizations. Gor. kholz. Mosk 34 no.8:10-11 Ag '60.
(MIRA 13:9)

1. Nachal'nik Glavmosstroya.
(Moscow--Building)

KRAVTSOV, Ya.V.; LIVCHAK, I.F.; PASHCHENKO, N.Ye.

Use of new heating units in modern construction. Vod. i san.
tekhn. no.8:28-31 Ag '61. (MIRA 14:9)
(Radiators)

PASHCHENKO, N.Ye.; NEMLIKHER, M.Ya.; YEVGEN'YEVA, S.M.

Bathrooms made of particle boards with polymer materials. Sbor.
trud. NIIST no.12:43-53 '62. (MIRA 16:3)
(Bathrooms) (Building materials)

LIVCHAK, I.F., doktor tekhn. nauk; PALKHRENKO, N.Ye., inzh.;
NOTKIN, Ye.M., kand. tekhn. nauk; KUR, G.Ye., kand. tekhn. nauk

Heating system with plinth-type cast-iron convectors without
casing. Vod. i san. tekhn. no.10:1-6 0 '65. (MIRA 18:11)

PASCHENKO, Nikolay Evgen'evich, ch... stritel' RSFSR; YANOV, I...
red.

[Chief builder of the capital, Sovyetsko-trudovik strel...
ritsy. Moskva, Mosk. ray. obshch., 1962. 187 p.]
(MIA-124)

I. Nachal'nik po delo upravleniya po zhiliishchnomu i
gospodarskому strelitel'stvu v gorode Moskve (for Paschenko).

PASHCHENKO, O.

Builders of Kharkov Province increase the speed of construction.
Sill' bud. 7 no.4:4-5 Ap '57. (MIRA 12:11)
(Kharkov Province--Farm buildings)

15 210

28716

S/021/61/000/008/011/011
D210/D303

AUTHOR: Pashchenko, O.O.

TITLE: Investigating the sintering of quartz and heat-resistant glass powders for the production of porous goods

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopovidi, no. 8, 1961, 1055-1057

TEXT: The subject of the investigation was the sintering process applied to a mixture of quartz and heat-resistant glass powders for the production of inorganic filters. These filters would have the following advantages over pure quartz ones: lower sintering temperatures (900°C) and a smaller volume-contraction. Samples of 4 x 30 mm were made from a mixture of 30% heat-resistant and 70% quartz glass powder, having a general particle surface of 5000 cm²/g. The samples were heated at 700, 800 and 900°C in an electric furnace for 2 hours. After cooling their ✓

Card 1/3

28716

Investigating the sintering ...

S/021/61/000/008/011/011
D210/D303

a highly viscous liquid; (its chemical composition being as follows: SiO_2 - 80.6; Na_2O - 4.9; MgO - 0.5; Al_2O_3 - 1.5; Be_2O_3 - 12; As_2O_3 ~ 0.5%). The capillary pressure, caused by surface tension, can rise to several kg/mm^2 in powders of great particle dispersion; this pressure being the cause of viscous flow of the heated glass; the velocity and direction of the latter is proportional to the projection of the force acting on the direction of flow. During this process disruptions of Si-O-Si bonds may occur, causing a permanent change in the molecular configurations in one definite direction. There are 3 figures and 4 Soviet-bloc references.

ASSOCIATION: Kyyiv's'kyy politekhnichnyy institut (Kyyiv Polytechnical Institute)

PRESENTED: by Academician AS UkrSSR, B.S. Lysin

SUBMITTED: February 13, 1960

Card 3/3

X

DOLGOPOLOV, Konstantin Vasil'yevich; SOKOLOV, Aleksey Vasil'yevich;
FEDOROVA, Yevgeniya Fedorovna; SKOBNIKOV, M.L.,
retsenzent; TYLKINA, M.A., st. nauchn. sotr., retsenzent;
FREYKIN, Z.G., st. nauchn. sotr., retsenzent; RODIONOVA,
F.A., red.; PASHCHENKO, O.V., red. kart; KARPOVA, T.V.,
tekhn. red.

[Iron ores of the U.S.S.R.] Zheleznye rudy SSSR; posobie
dlia uchitelia. Moskva, Uchpedgiz, 1963. 157 p.
(MIRA 17:2)

1. Glavnyy spetsialist Gosplana SSSR (for Skobnikov).
2. Institut chernoy metalurgii imeni Baykova (for Tylkina).
3. Institut geografii AN SSSR (for Freykin).

VLASOVA, Tat'yana; DAVYDOVA, Marina Ivanovna; MONIN, Sergey
Aleksandrovich; FISHCHEVA, T.V., red.; PASHCHENKO, O.V.,
red. kart; PODOL'SKAYA, M.Ya., red. kart; MAKHOVA, N.N.,
tekhn. red.

[Practical studies in the physical geography of the parts of
the world] Prakticheskie raboty po fizicheskoi geografii
chastei sveta; posobie dlja studentov pedagogicheskikh in-
stitutov. Moskva, Uchpedgiz, 1962. 158 p. (MIRA 16:5)

1. Dotsenty kafedry fizicheskogo stranovedeniya Moskovskogo
gosudarstvennogo pedagogicheskogo instituta imeni V.I.Lenina
(for Vlasova, Davydova, Monin).

(Physical geography)

SHIBANOVA, A.A., red.; PASHCHENKO, O.V., red. kart; SHCHEPTEVA, T.A.,
tekhn. red.

[The countries of southern Asia; economic and geographical
survey of India, Pakistan, Nepal and Ceylon] Strany IUzhnoi
Azii: India, Pakistan, Nepal, TSeilon; ekonomiko-geografiche-
skii obzor (posobie dlia uchitelei). Moskva, Gos.uchebno-
pedagog.izd-vo M-va prosv. RSFSR, 1961. 260 p. (MIRA 15:1)
(Asia—Economic geography)

ORLOV, Vasiliy Ivanovich; KONSHINA, V.A., red.; PASHCHENKO, O.V.,
red.kart; SHVARTSBERG, L.D., tekhn. red.

[Western Siberia; studies on nature and economy. Textbook
for teachers] Zapadnaia Sibir' (ocherki o prirode i khoziaistve);
posobie dlia uchitelia. Moskva, Gos. uchebno-pedagog. izd-vo
M-va prosv. RSFSR, 1961. 190 p. (MIRA 15:4)
(Siberia, Western--Economic geography)

KNOBEL'SDORF, Eduard Vil'gel'movich; RODIONOVA, F.A., red.; KOROVINA, K.A.,
red. kart; PASHCHENKO, O.V., red. kart; MOKHOVA, N.I., tekhn. red.

[Practical exercises on the economic geography of the U.S.S.R.]
Prakticheskie zaniatiia po ekonomicheskoi geografii SSSR. Moskva,
Gos.uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1960. 123 p.
(MIRA 14:12)

(Geography, Economic)

POBEDINA, Mariya Pavlovna; TSYBUL'SKIY, Vladimir Vasil'yevich;
SHIBANOVA, A.A., red.; PASHCHENKO, O.V., red. kart;
KOVALENKO, V.L., tekhn. red.

[Afghanistan, Iran, Turkey; economic and geographical survey]
Afganistan, Iran, Turtsiiia; ekonomiko-geograficheskii obzor.
Posobie dlia uchitelia. Moskva, Uchpedgiz, 1961. 199 p.
(MIRA 15:5)

(Afghanistan—Economic geography)
(Iran—Economic geography)
(Turkey—Economic geography)

GLUZDAKOV, Semen Iosifovich; FISHCHEVA, T.V., red.; PASHCHENKO, O.V.,
red.kart; KOZLOVSKAYA, M.D., tekhn.red.

[Geography of cultivated plants; manual for teachers] Geografiia
kul'turnykh rastenii; posobie dlia uchitelia. Moskva, Gos.
uchebno-pedagog.izd-vo M-va prosv.RSFSR, 1960. 143 p.

(MIRA 13:4)

(Plants, Cultivated) (Phytogeography)

DAVYDKIN, Pavel Karpovich; VASIL'YEVA, O.S., red.; PASHCHENKO, O.V.,
red.kart; SMIRNOVA, M.I., tekhn.red.; DZHATTIYEVA, F.Kh.,
tekhn.red.

[Reader in the physical geography of the U.S.S.R.] Khrestomatiia
po fizicheskoi geografii SSSR. Moskva, Gos.uchebno-pedagog.izd-vo
M-va prosv.RSFSR, 1959. 351 p. (MIRA 13:2)
(Physical geography)

DAVYIKIN, Pavel Karpovich; VASIL'YEVA, O.S., red.: PASHCHENKO, O.V.,
red.kart; SMIRNOVA, M.I., tekhn.red.; DZHATIYEVA, F.Kh.,
tekhn.red.

[Reader on the physical geography of the U.S.S.R.] Khresto-
matiia po fizicheskoi geografii SSSR. Moscow, Gos.uchebno-
pedagog.izd-vo M-vn prosv.RSFSR, 1959. 351 p. (MIRA 13:2)
(Physical geography)

PASHCHENKO, F.

Those who die for their native land are eternally glorious. Voen.
znan. 37 no.9:11 S '61. (MIRA 14:9.
(Shumshi Island--World War, 1939-1945)

PASHCHENKO, P., Captain 1-rank

City by the ocean. Vyspel 11 no.13:15-16 J1 148.
(MIR 11:1)

(Vladivostok--Description)

PASHCHENKO, P., kapitan 1 ranga.

To Denmark. Sov.mor.16 no.20:13-16 0 '56. (MLRA 10:1)
(Warships--Visits to foreign ports) (Russia--Relations (General)
with Denmark) (Denmark--Relations (General) with Russia)

PASHCHENKO, P., kapitan 1 rang.

In the Netherlands. Sov.mor.16 no.18:5-8 S '56. (MIRA 10:1)

(Warships--Visits to foreign ports)

(Netherlands--Relations (General) with Russia)

(Russia--Relations (General) with the Netherlands)

BARANOV, A.V.; OKHRAMOVICH, A.Ye.; IASECHIKO, F.A.

Adsorption of nitrogen oxides by activated carbon. Trudy MMTI
no.6:53-65 '53. (MIRA 13:11)
(Carbon, Activated) (Nitrogen oxide)

PASHCHENKO, P.D., vrach

Higher nervous function. Nauka i zhyttia 8 no.11:29-32 K '58.
(MIRA 13:5)
(NERVOUS SYSTEM)

COUNTRY : USSR
CATEGORY :

M-6

ABS. JOUR. : RZBiol., No. 19, 1958, No. 87093

AUTHOR : Pashchenko, P. D.
INST. : Chkulov Scientific Research Institute of *
TITLE : Growing of Green Fodder Crops as a Cover Crop.

ORIG. PUB. : Tr. Chkalovskiy n.-i. in-t, molochno-myasn. skotovodstva, 1956, No 10, 35-46

ABSTRACT : Trials, as cover crop of fallow land, of spring sowings of oats, oats with lentils, winter wheat, sudangrass, foxtail millet, panicgrass, oats with field peas; of early summer plantings of sudangrass, foxtail millet, panicgrass, corn; of sowings on autumn plowed land of corn, and oats with field peas. During the year when the feed crop was utilized the land on which the cover crop was grown retained less moisture in comparison with clean fallow, but by the spring of the following year the moisture content of the soil became equalized. Difference in the amount of weeds in spring wheat following clean fallow and cover crop is slight. Yields of spring wheat

CARD: 1/2

* Dairy-and-Meat Cattle Breeding.

--

PASHCHENKO, P. D. (Cand. Agr. Sci.)

"Utilization of Occupied Fallow Lands in Podder Crop Rotation for the Cultivation of Green Conveyer." (dissertation). Chkalov, 1957. 19 pp.
20 cm.

At All-Union Scientific Research Inst. of Podder in V. P. Vill'yams. 150 copies.
KL, 27-57, 108.

PASHCHENKO, P.I., kand.tekhn.nauk

Protective coatings for plain and reinforced concrete construction
elements subjected to actions of corrosive media. Prom.stroi. 37
no.3:24-27 Mr '59. (MIRA 12:4)
(Protective coatings) (Chemical plants)

Pashchenko, P.N.

2

L *Filtration of viscose (P. N. Pashchenko, Tselinnoe
Prov., No. 9, 34-51) 1955.* — Advantages of various meth-
ods of filtration of viscose are discussed. Use of gear
pumps is recommended.

pm AA

PASHCHENKO, P. N.

The choice of a viscose filtration method. Tekst.prom.15 no.9:34-35
S '55. (MLRA 8:11)
(Rayon)

PASHCHENKO, P.P. (Globino Poltavskoy oblasti)

Uterine perforation with an intestinal lesion in medical abortion.
Fel'd. i akush. 27 no.4:29 Ap '62. (MIRA 15:6)
(ABORTION--COMPLICATIONS AND SEQUELAE)
(UTERUS--WOUNDS AND INJURIES)
(INTESTINES--WOUNDS AND INJURIES)

MASHINKAI, T.D.

Hydroelectric power plant under construction at the Krasnoyarsk
damming complex, Siberia. An estimated 1000 MW of power

is currently being generated from hydroelectric power plants in the
region by this time.

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PASHCHENKO, P.P.

Portable apparatus for the diagnosis and treatment of tubal sterility. Ped., akash. i gin. 23 no.5:62-63 '61. (MIRA 14:12)

1. Rayonnaya bol'nitsa (glavnny doktor - V.N. Motorin [Motoryn, V.N.] Globinskogo rayona Poltavskoy oblasti.
(STERILITY) (FALLOPIAN TUBES)
(MEDICAL INSTRUMENTS AND APPARATUS)

PASHCHENKO, F.P.

Novocaine galvanization of the solar plexus in treating peptic ulcers and hyperacid gastritis. Vop. kur., fizioter. i lech. fitz. kul't., 30 no.3:209-211 My.Je '65. (MIRA 18:12)

I. Globinskaya rayonnaya bol'nička (glavnyy vrach V N. Matorin') Poltavskoy oblasti. Submitted July 30, 1965.

PASHCHENKO, S.I., kand.med.nauk

Course of intrathoracic changes in patients with osteoarticular
tuberculosis, treated by surgery. Probl.tub. no.1:70-74 '62.
(MIRA 15:8)

1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta tuberkulo-
leza v Khar'kove (dir. - dotsent H.M. Yanov).
(BONES--TUBERCULOSIS) (TUBERCULOSIS)

PASHCHENKO, S. I.

"Clinical and Immunobiological Characteristics of Original Tuberculosis in Destructive Affections of the Lungs." Khar'kov Medical Inst., Khar'kov, 1955. (Dissertation for the Degree of Candidate in Medical Sciences)

SO: Knizhnaya Letopis', No. 22, 1955, pp 93-105

SIDORIN, I.I.; RYSKINA, Ye.V.; PASHCHENKO, S.V.; SALAMAKHINA, G.M.

Using the nitriding method in hardening surfaces of parts made
of titanium alloys. Nauch. dokl. vys. shkoly; mash. i prib. no.2:
120-136 '59. (MIRA 12:12)

(Case hardening)
(Titanium alloys--Metallography)

BONDAPEV, Nikolay Ivanovich; T. N. Khol'ko, Sergey Vasil'evich
LEVINA, I.M., ed.

[Brief manual on the care of patients with certain diseases]
Kratkoe posudie po vnutrennim bozom, pri posleidstvii
zabolevaniy. Taskeent, "Tashkent", 1975. 116 p.

UL'YANOV, M.I.; PASHCHENKOV, S.Z.

Changes in the bone marrow and peripheral blood in schizo-
phrenia. Sovet. med. 27 no.6:124-129 Je'63 (MIRA 17:2)

1. Iz Instituta psikiatrii (direktor - deystvitel'nyy chlen
AMN SSSR prof. A.V. Snezhnovskiy) AMN SSSR.

PASHCHENKO, T., nauchnyy sotrudnik; KOLYASEVA, V., nauchnyy sotruanik

Under film cover. Neuka i pered. oo. v sel'khoz. B no. 7:57-58
Jl '58. (MIRA 11:8)

1. Agrofizicheskiy institut.
(Vegetable gardening)

PASHCHENKO, T.Ye.; ROZHANSKAYA, O.D.

Soil temperature in hills of early potatoes. Sbor. trud. po agron.
fiz. no.6:121-130 '53. (MIRA 11:7)
(Soil temperature) (Potatoes)

PASHCHENKO, V.; PSHENICHNIY; SHKOL'NIKOV, B., redaktor; TAROMENOK, Yu.,
redaktor; PETRONYUK, L. tekhnichniy redaktor.

[Lvov in photographs] L'viv u fotoiliustratsiiakh. Kyiv, Derzh.vyd.
vo obrazotvorchoho mystetstva i muzychnoi lit-ry, 1956. 1 v.

(MLRA 10:3)

(Lvov--Views)

PASHCHENKO, V., nauchnyy sotrudnik; SHTEYNIKOVA, Ye., nauchnyy sotrudnik;
PAKHMATULINA, M., nauchnyy sotrudnik.

Efficient complex of measures. Zashch. rast. ot vred. i bol
10 no.9:19-22 '65.
(MIRA 18:11)

I. Institut sadovo-istv., vinogradarstva i vinodeliya im.
R.F. Shchedera.

KALASHNIKOV, Nikolay Andreyevich, kand. tekhn. nauk; PASHCHENKO, V.A.,
red.; GORYACHKINA, R.A., tekhn. red.

[Roadway of highway bridges without adhesive waterproofing]
Proezzhaia chast' avtodorozhnykh mostov bez okleechnoi gidro-
izoliatsii. Moskva, Avtotransizdat, 1963. 67 p.

(MIRA 16:6)

(Bridges--Design and construction)

ANALYSIS, V.A., kant.tokhneak

Analysis of expenses for the transportation of building structures.
Avt.dor. 26 no.1279 D '63. [MIRA 17]

FAIRBANKS, ALASKA

Variability of the most probable density in different months
of Vicia sativa L. under the effect of temperature. By N. G. G.
ne. Biol. - 1948. April.

• The graph shows the variation of the most probable density of Vicia sativa L. over time.

PASHCHENKO, V.N.

Effect of low temperatures on the germination of *Vicia fava* L.
seeds grown under varying conditions of day length. Sbor. trud.
asp. i mol. nauch. sotr. VIR no.5:201-203 '64.

(MIRA 18:3)

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Pt-10/Peb/Pn-4/Pk-4 IJP(c)/AFSL/SSD(b)/ASD(a)-5/ASD(f)-2/SSD/ASD(m)-3/
ACCESSION NR: AF4045317 AS(mp)-2/ESD(ga)/S/0048/64/028/009/1537/1540
ESD(t) JHE/JD/TM/WW/JG/AT

AUTHOR: Gus'kov, Yu. K.; Pashchenko, V. P.; Sibir, Ye. Ye. ^B

TITLE: Investigation of the operation of a thermionic converter with
different metal film cathodes [Report, Tenth Conference on Cathode
Electronica held in Kiev from 11 to 18 Nov 1963]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 28, no. 9,
1964, 1537-1540

TOPIC TAGS: thermionic converter, rectifier, cesium, tungsten, molyb-
denum, niobium, rhenium ²⁵ ²⁷

ABSTRACT: This paper gives the results of investigation of a thermionic converter with a Nb, Mo, W, or Re cathode operated in diffusion and arc modes. The measurements were carried out in glass tubes with rectangular electrodes. The cathodes were in the form of 0.05 to 0.1 mm thick, 5 x 12 mm ribbons and were mounted, by means of tantalum tension wires, 0.7 mm from the massive, finned anode. The tube was filled with cesium vapor at pressures from 0.1 to 10 mm Hg. The experimental results are presented in the form of curves: $I \sqrt{P}$ (P is the

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Cs vapor pressure) versus $1/T$, I versus V, W versus V, W versus T, and I versus T (T is the cathode temperature). It was found that: 1) in the volume ionization mode, the converter short-circuit current increases with the work function of the cathode material and the Cs vapor pressure; 2) in this mode, the converter current is only weakly dependent on the cathode temperature; 3) the converter voltage at peak power increases with increase of the cathode temperature and with decrease of the cathode work function; 4) in both the volume ionization and low-voltage arc mode, some temperature and voltage hysteresis loops are evidenced (that is, the current depends on the manner of variation in the parameters V and T); 5) a transition to the volume ionization mode can be realized by either a change in the cathode temperature or application of an external voltage. For operation in the volume ionization mode, which is generally more efficient, cathodes with a high work function are preferred. "The author is grateful to the late Prof. I. I. Bon-darenko for useful discussions and interest in the work." Orig. art. has: 2 formulas, 6 figures, and 1 table.

ASSOCIATION: none

Card 2/3

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L 12044-65 EWT(1)/EPA(s)-2/EWG(k)/EWT(m)/EPA(sp)-2/EPF(n)-2/EPA(w)-2/T/EWP(t)/
EWA/EWP(b) Pz-6/Pab-10/Pt-10/Pu-4 IJP(c)/SSD/ASD(m)-3/AFWL/ASD(t)-2/ESD(j8)/
ACCESSION NR: AP4045318 ESD(t)/SSD(b) JD/MW/JG/AT 6/0048/64/028/009/1545/1547

AUTHOR: Bondarenko, V.K.; Gus'ko, Yu.K.; Pashchenko, V.P.

TITLE: Determination of the thermoelectronic emission constants of metal film cathodes of converters Report, Tenth Conference on Cathode Electronics held in Kiev, 11-18 Nov 1963

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.9, 1964, 1545-1547

TOPIC TAGS: thermoelectric converter, cesium vapor diode, work function, thermionic emission, molybdenum, niobium

ABSTRACT: Two procedures for measuring the thermoelectronic emission constants of electrodes in cesium vapor diodes are discussed. The first technique is based on the conclusion, drawn from work of V.P.Karmazin, I.I.Kazikov and I.P.Stakhanov (Izv. AN SSSR, Ser.fiz.28, 1541, 1964 - Abstract Acc.Nr:AP4045318) that under conditions of thermodynamic equilibrium the change in the anode potential of a cesium vapor diode carrying a constant current due to a change in the anode temperature is essentially equal to the change in the anode work function. By measuring the equilibrium current as a function of the anode potential for different anode temperatures one can

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thus determine the variation of the anode work function with temperature. The zero point on the resulting curve can be located by means of the known work function of the thick cesium layer that forms on the electrode at low temperatures (about 400°K). The work functions in cesium vapor of niobium at 0.12 torr and molybdenum at 0.23 torr were measured in this way, and the results are presented graphically. The molybdenum work function exhibited a pronounced minimum of 1.7 eV at 730°K. The second procedure consists in determining the thermionic emission (Richardson) current I_R from the relation $I = I_S/I - I/I_R$, where I_S is the equilibrium current and I is the current through the converter under conditions of overcompensation. Results of such measurements of the emission current of molybdenum are presented. They are considered to be in satisfactory agreement with the measurements of R.L.Aamodt (J.Appl. Phys. 33, 2080, 1962). It is concluded that the proposed procedures can be employed to measure the thermoelectronic emission constants of metal film cathodes in cesium vapor atmospheres of relatively high pressure, and that by a combination of the two techniques both the work function and the Richardson constant can be determined. "In conclusion, the authors express their deep gratitude to the late Prof. I.I.Bondarenko for valuable discussions." Orig.art.has: 4 formulas and 3 figures.

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AUTHOR: Gus'kov, Yu.K.; Pashchenko, V.P.; Stakhanov, I.P.; Stumbur, E.A.

TITLE: Effect of Coulomb scattering on the operation of thermo-electronic converters

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.6, 1984, 1105-1106

TOPIC TAGS: Coulomb scattering, electron collision, diode, cathode, cesium, thermo-electronic converter

ABSTRACT: The electron collision frequencies obtained from the dependence of the current on the transverse magnetic field in cesium vapor thermal emission converters greatly exceed the corresponding frequencies of collision between electrons and cesium atoms. The possibility is discussed of ascribing this discrepancy to the effect of Coulomb collisions of the electrons with electrons and ions. Experimental collision frequencies in cesium vapor diodes are plotted against pressure and compared with the calculated Coulomb collision frequencies. The theoretical curve lies somewhat above the experimental points. To account for this slight discrepancy several possibilities are adduced, including the inexactness of the concept of collision

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